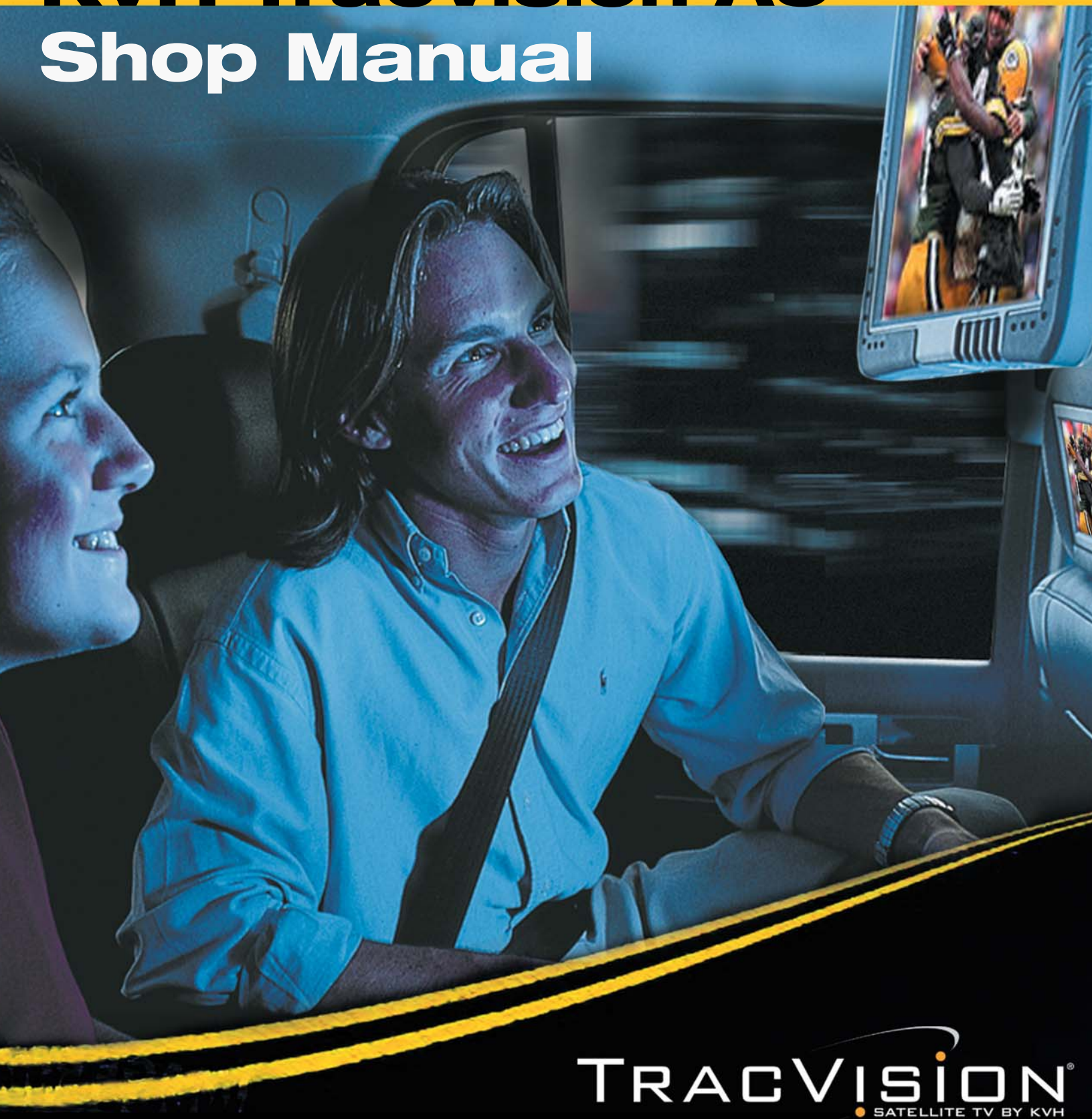


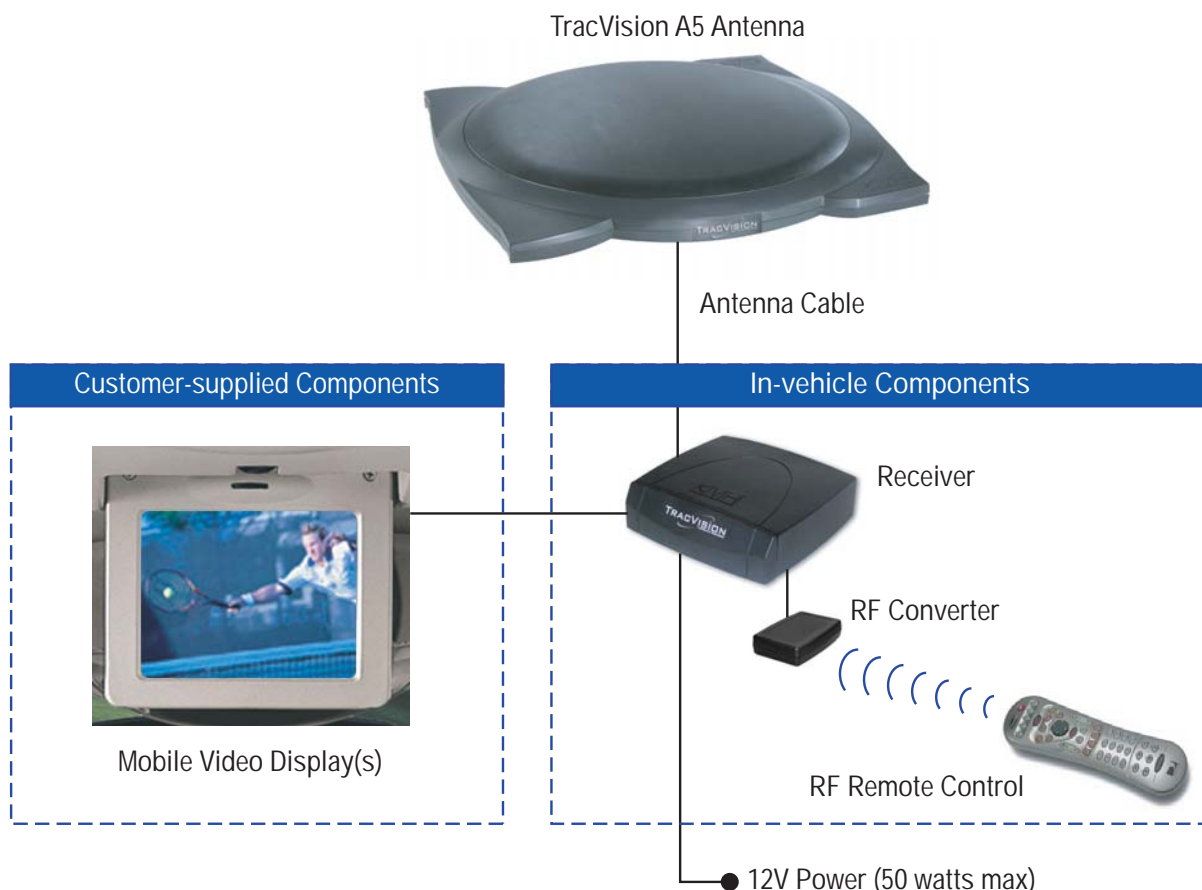
KVH TracVision A5 Shop Manual



TRACVISION[®]
SATELLITE TV BY KVH



TracVision A5 Overview



- Provides excellent satellite TV reception while driving along the open road.
- Antenna tracks the DIRECTV 101W satellite, which is located in the southern sky.
- System includes an integrated DIRECTV receiver (with picture-in-guide APG), an RF converter, and an RF remote control.
- For detailed installation instructions, refer to the *TracVision A5 Installation Guide*. For complete operation instructions, refer to the *TracVision A5 User's Guide*.

Effective April 2004
Subject to change without notice



Safe Handling

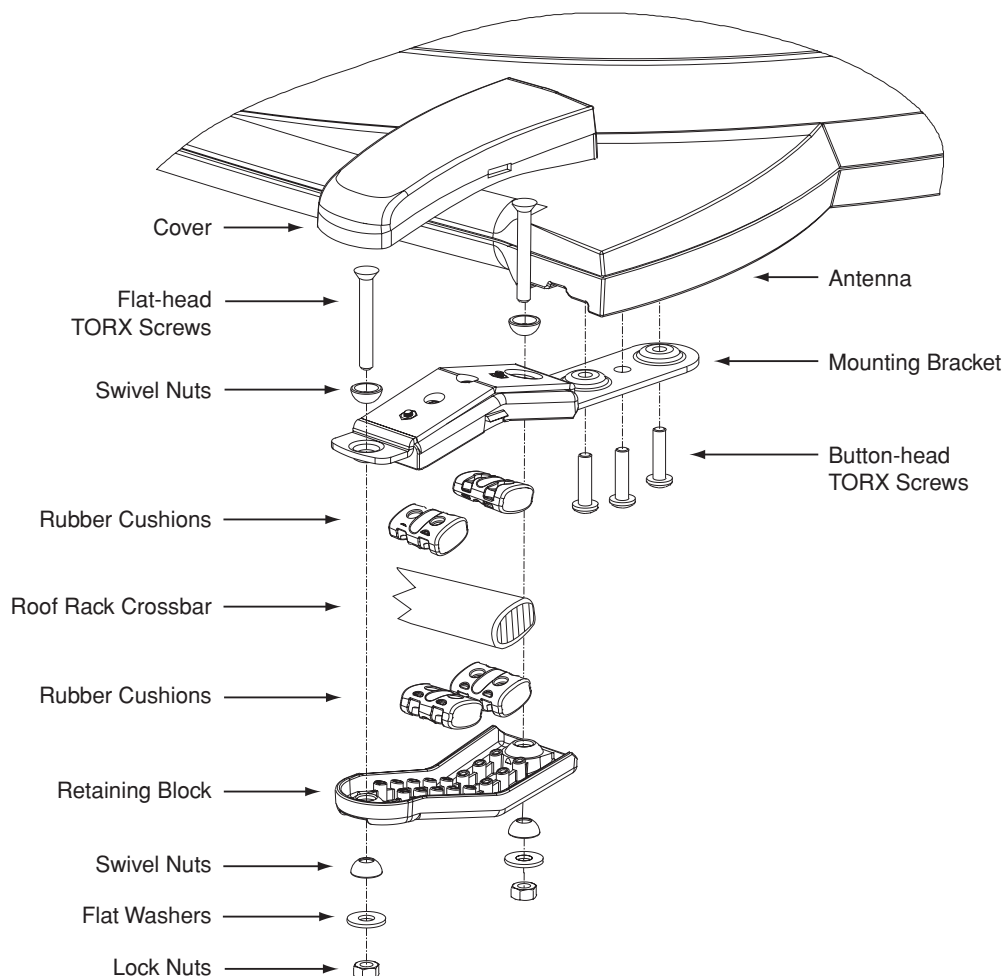


- Two people are required to lift the antenna. Do not try to install the antenna by yourself.
- Remove the shipping restraints from underneath, as shown in the photos above. Do not flip the antenna upside down.
- Never tilt the antenna greater than 45° once the restraints are removed.

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Mounting to a Roof Rack

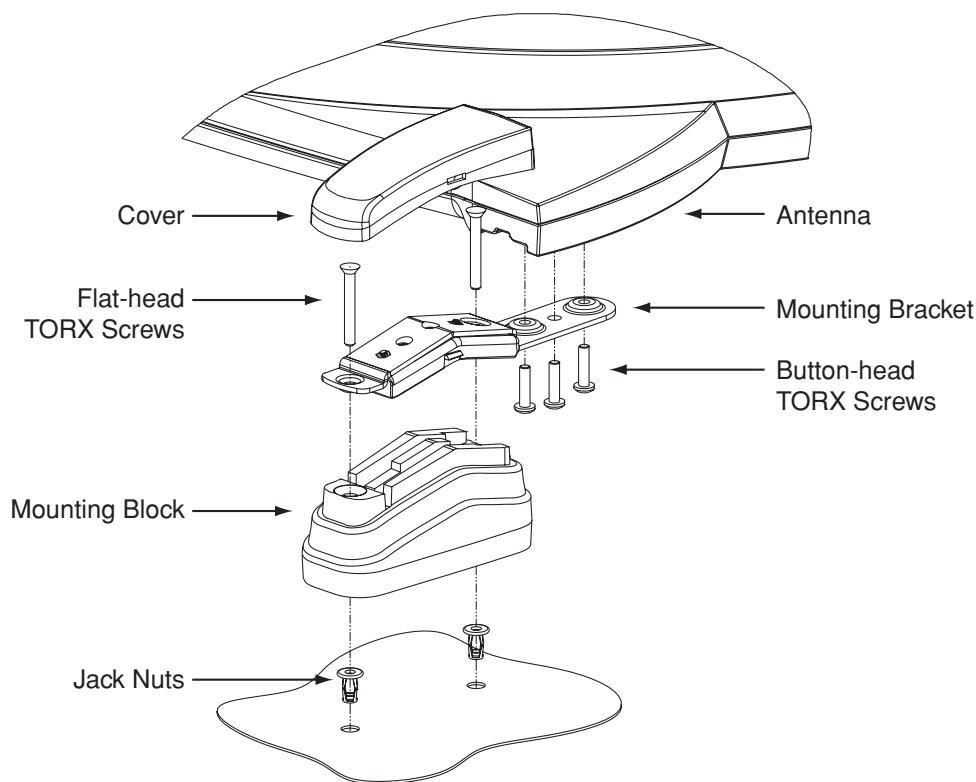


- Position the roof rack crossbars 35½" apart, measured center-to-center.
- At least 1" clearance is required between the underside of the antenna and the roof. To raise the antenna higher, use the spacers supplied in the kitpack (see page 2.6 of the *Installation Guide for details*).
- Always use the tamper-resistant TORX hardware supplied in the kitpack. Do not use any substitutes.

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Mounting to the Roof

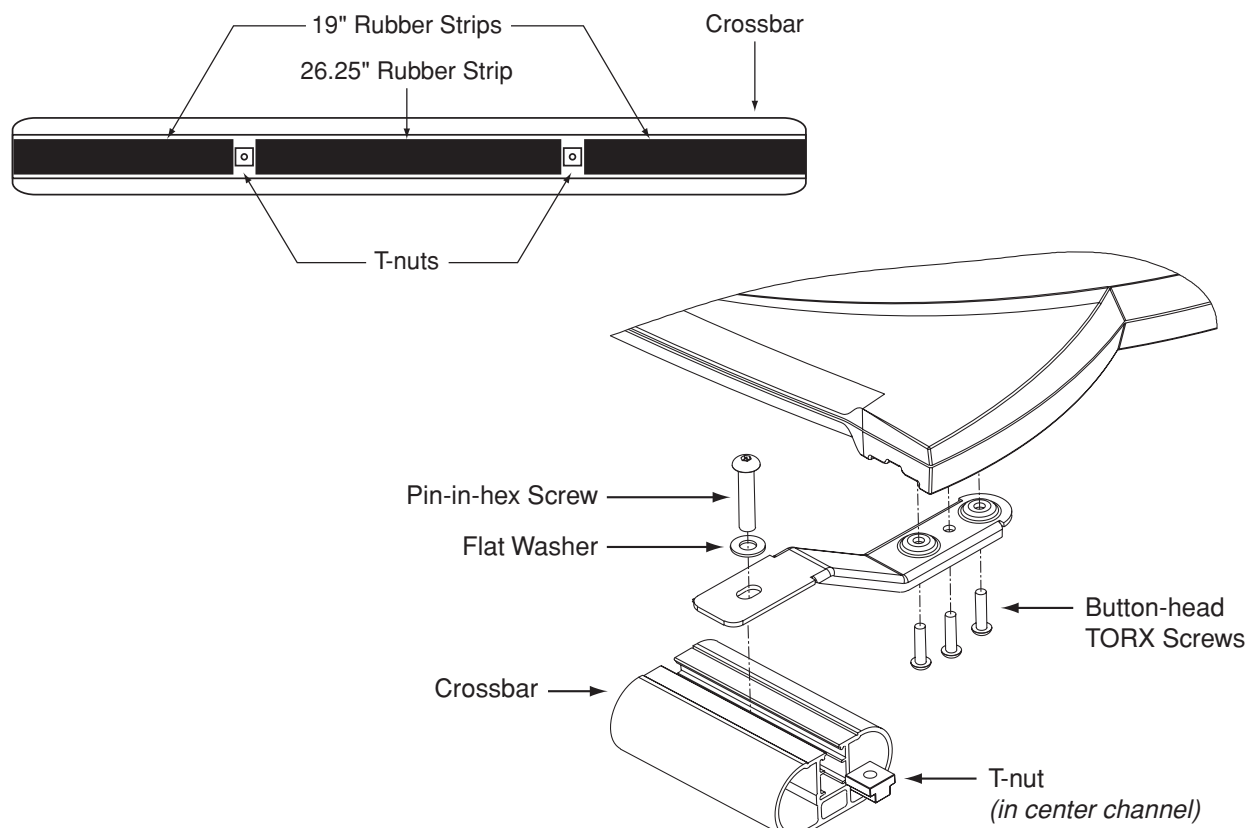


- KVH's roof-mount kit is designed only for flat metal roofs up to $\frac{3}{16}$ " thick.
- Install a jack nut in all eight $\frac{7}{16}$ " mounting holes. Ensure the jack nuts are securely attached to the roof.
- At least 1" clearance is required between the underside of the antenna and the roof. To raise the antenna higher, use the spacers supplied in the kitpack (see *page 3 of the roof-mount instructions for details*).
- Always use the tamper-resistant TORX hardware supplied in the kitpack. Do not use any substitutes.

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Mounting to Hummer Rack



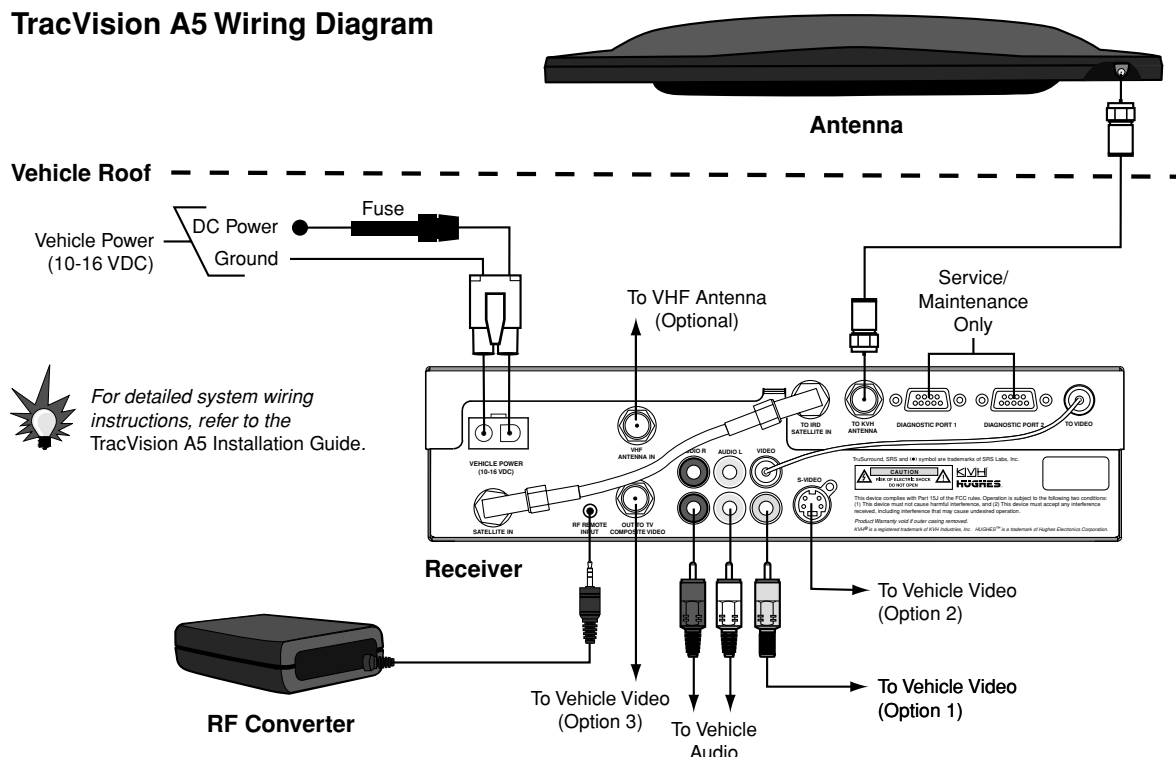
- KVH's Hummer kit is designed only for standard 2"-thick Hummer roof rack crossbars.
- Position the roof rack crossbars $39\frac{1}{2}$ " apart, measured center-to-center.
- Cut each crossbar's rubber strip into three pieces as shown above. These measurements are critical to position the T-nuts properly.
- Always use the tamper-resistant TORX and pin-in-hex hardware supplied in the kitpack. Do not use any substitutes.

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Proper Wiring

TracVision A5 Wiring Diagram



- If you must cut the antenna cable, terminate the cable with the supplied Snap-N-Seal® F-connector. Low-quality connectors will degrade system performance.
- Always use an Augat tool (KVH P/N 19-0242) to attach F-connectors.
- Do not kink or stress the antenna cable.
- Tighten all connections adequately.
- Use high-quality video cable between receiver and monitor(s).
- Place the RF converter at least 3 feet away from the receiver and other electronic devices.

Augat Tool





Connecting to Power

Before you start:

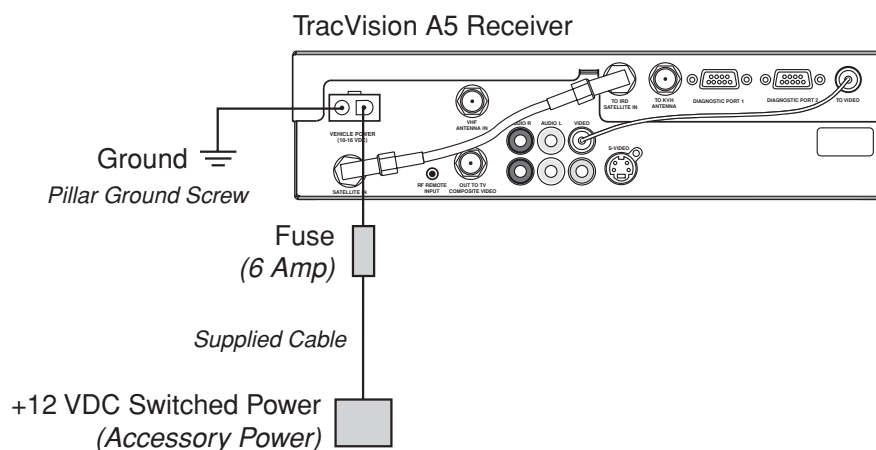
- Before connecting the power cable, remove the key from the ignition and remove the negative lead from the vehicle battery.

Connecting the receiver power cable's red (positive) wire:

- Connect the red wire to +12 VDC switched (accessory) power.
With the vehicle running and the receiver turned on, power at the receiver must measure at least 11 VDC.
- Do not wire any other device to the same power circuit.

Connecting the receiver power cable's black (negative) wire:

- Connect the black wire to its own dedicated chassis ground (such as a pillar ground screw) within 18" of the receiver.
- The black wire must make contact between the metal of the ground screw and the metal of the vehicle frame.

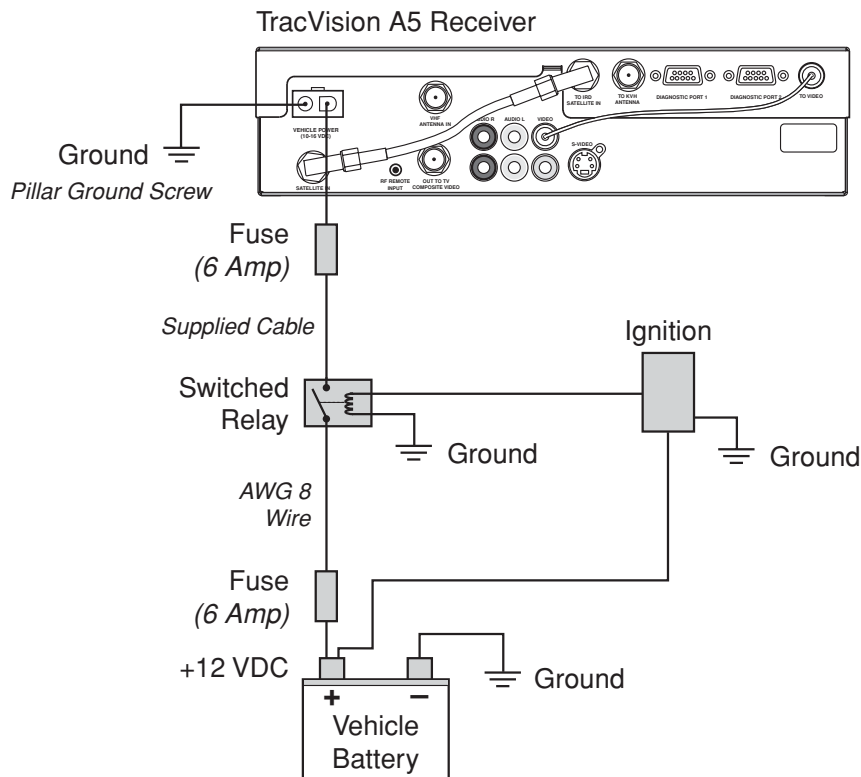




Connecting to Power (cont'd)

Do not connect the receiver directly to the vehicle's battery without following these additional steps:

- Install a protective fuse (6 amps) within 18" of the battery.
- Install a relay, switched from the ignition, between the battery and the receiver.
- Use fire-resistant AWG 8 wire from the relay to the battery.





Installation Checklist

- ✓ You affixed the antenna serial number label to the red Activation Card.
- ✓ You verified the roof rack crossbars are securely fastened to the vehicle and are sturdy enough for the antenna.
- ✓ You removed the antenna's shipping restraints from below.
- ✓ You used the proper tamper-resistant mounting hardware.
- ✓ You allowed at least 1" of clearance between the antenna and the vehicle's roof.
- ✓ You verified that the antenna is securely attached to the vehicle.
- ✓ You used an Augat tool to attach the F-connector to the antenna cable (if you cut the cable).
- ✓ You connected the antenna cable, high-quality audio/video cables, and RF converter cable securely to the receiver.
- ✓ You connected the receiver's power cable to +12 VDC switched (accessory) power.
- ✓ You placed the RF converter 3 feet away from the receiver and other electronic devices.
- ✓ You installed the receiver in a dry location away from any heat sources, allowing 2 inches of empty space for ventilation.
- ✓ You installed 2 "AAA"-size batteries in the remote control.



Proper Operation

PLEASE NOTE!

If the TracVision system was left on when the vehicle was last turned off, TracVision will automatically turn on when you start up the vehicle. DO NOT DO ANYTHING! Wait 30-60 seconds for the Program Guide to load and you are ready to watch TV – if the Program Guide doesn't load, check for blockage as noted in step 7.

1. Turn on the car.
2. Ensure that the receiver's power switch is turned on. The light should be lit.
(The receiver beeps twice.)
3. Turn on the video screen and select the A5 receiver input *(not the DVD/VCR input)*.
4. Do not move the vehicle for 20 seconds.
5. If the TracVision system was left on when the vehicle was last turned off, **Message 1** then **Message 2** will appear on the screen.



Message 1

If your satellite dish is ready for DIRECTV® service, please wait until your Advanced Program Guide™ is prepared.

Installation

■■■■■■■■■■■■■■■■■■■■

Searching for satellite signal...

then
→

Message 2

If your satellite dish is ready for DIRECTV® service, please wait until your Advanced Program Guide™ is prepared.

Installation

■■■■■■■■■■■■■■■■■■■■

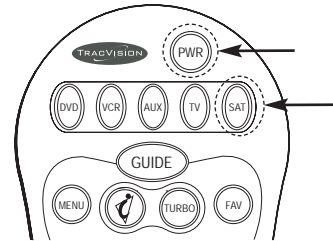
Acquiring guide data...

CONTINUED ON NEXT PAGE...



Proper Operation (cont'd)

6. If Message 1 does not appear after 30 seconds, press the remote control's SAT button. Then press the POWER button. The receiver beeps twice. Do not move the vehicle for 20 seconds. *(A single beep indicates that the system is turned off.)*



Activation & Operation

7. If Message 2 does not appear after Message 1, ensure that the antenna has a clear view of the satellite and there is no standing water (rain, dew, or ice) on the dome. The antenna requires an unobstructed view of the southern sky to receive satellite TV signals. Once the antenna finds the satellite, and the receiver downloads the Program Guide *(it may take 60 seconds)*, you can start watching TV.

Note:

Only the DIRECTV preview channels (such as channels 100 and 201) are viewable until the customer activates the receiver.



Using the Receiver

Activating a Receiver

- Before the customer can start enjoying satellite TV, he/she must activate the receiver (*after the system has been installed*).
- Don't forget to give the customer the red Activation Card, which comes attached to the back of the receiver. The customer needs this card in order to activate the receiver.
- Be sure to affix the antenna serial number label to the Activation Card.
- KVH's Activation Department: **1-866-551-8004**

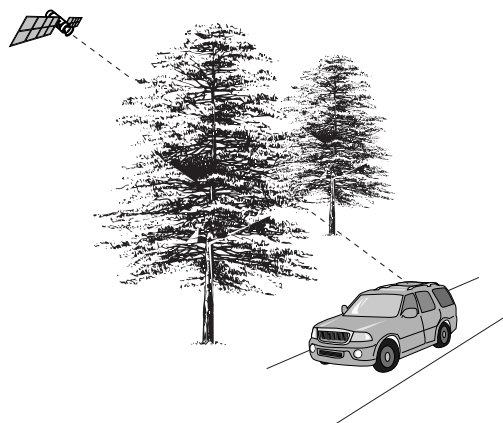
Replacing a Receiver

- First call KVH Technical Support at **1-401-847-3327** (*press 3, 5, then 1 to skip the recording*).
- Before you return a receiver, please fill out the *TracVision A5 Receiver Return Form* (see *Technical Bulletin 04_T_LND_12V_1*) and fax it to KVH at **1-401-845-8133**. KVH needs this information before it can ship a replacement.
- Be sure to tell the customer that he/she must call KVH to activate the new receiver and deactivate the old receiver (*if it was activated*). Only the customer can activate/deactivate a receiver.
- DIRECTV will continue to bill the customer until he/she deactivates the old receiver.



What to Tell the Customer

- Don't forget to give the customer the Activation Card! The customer must call KVH at **1-866-551-8004** to activate.
- Make sure the customer understands how to use the remote control and how to turn on and operate the TracVision A5. Refer to the *Quick Start Guide* and *User's Guide*.
- Let the customer know the new height of the vehicle with the antenna installed.
- It is **dangerous** to watch television or operate the remote control while driving a vehicle. The TracVision A5 is designed for rear-seat entertainment only.
- Do not move the vehicle for 20 seconds after turning on the TracVision A5. This allows the antenna gyros to initialize properly.
- The antenna tracks the DIRECTV 101W satellite. It cannot receive channels on other satellites.
- The antenna must have a clear view of the southern sky to receive satellite signals. Common causes of blockage include trees, buildings, overpasses, tunnels, and mountains. The system will not work inside a garage.
- Heavy rain, dew, snow, or ice may temporarily interrupt reception or, if starting up, impair the antenna's ability to find the satellite.





Do's and Don'ts - Antenna

DO...

- DO remove all wire shipping restraints from underneath the antenna.
- DO get another person's help to lift the antenna.
- DO install all three TORX screws at each mounting bracket.
- DO apply threadlocker (Loctite 425) to the threads of the mounting screws if you are reusing them. *Be careful not to drip threadlocker on the vehicle.*
- DO allow at least 1" clearance between antenna and roof.
- DO make sure the antenna is securely attached to the vehicle.
- DO make sure the roof rack crossbars are securely fastened to the vehicle, if you are mounting the antenna to the roof rack.
- DO inform the customer of the vehicle's height with the antenna installed.

DO NOT...

- DO NOT flip the antenna upside down to remove restraints.
- DO NOT attempt to lift the antenna by yourself.
- DO NOT use any substitute mounting hardware.
- DO NOT twist or bend the antenna frame.



Do's and Don'ts - Antenna (cont'd)

DO NOT...

- DO NOT mount the antenna to a sloped surface.
- DO NOT tilt the antenna greater than 45° once the restraints are removed.
- DO NOT paint the antenna.
- DO NOT use KVH's roof-mount kit if the roof is greater than $\frac{3}{16}$ " thick.
- DO NOT install the antenna on an 18-wheel, commercial truck. The excessive vibration experienced on these vehicles will impair the antenna's ability to track the satellite.
- DO NOT mount the antenna sideways on the vehicle's roof. Be sure the connector is facing the rear of the vehicle. The front of the antenna is aerodynamically designed for the least noise and best moisture protection.
- DO NOT use abrasive cleaners, volatile solvents (such as methyl alcohol), or compounds that react with plastic when cleaning the antenna.



Do's and Don'ts - Receiver

DO...

- DO install the receiver in a dry, well-ventilated area away from any heat sources.
- DO allow at least 2 inches of empty space around the receiver for ventilation.
- DO place the RF converter at least 3 feet away from the receiver.
- DO set up the program guide for the customer's time zone (see *page 8.11 of the TracVision A5 User's Guide*).
- DO give the Activation Card to the customer. *Be sure to affix the antenna serial number label to the card.*
- DO order an additional A5 receiver from KVH if the customer requests two receivers.
- DO be sure to read carefully the "Power" Do's and Don'ts.

DO NOT...

- DO NOT install the receiver near a heat vent.
- DO NOT install the receiver in an enclosed space with no ventilation.
- DO NOT place the RF converter behind a metal surface or in an area surrounded by metal (e.g., under a seat).



Do's and Don'ts - Wiring

DO...

- DO terminate the antenna cable with the supplied Snap-N-Seal F-connector.
- DO use an Augat tool to install F-connectors.
- DO check the integrity of the F-connectors. Resistance measured between center conductor and shield should indicate an open circuit.
- DO maintain a bend radius of at least 3" when routing the antenna cable.
- DO use high-quality video cables between receiver and monitor(s).
- DO tighten all connections adequately.
- DO use the rubber boot to protect the antenna connector.

DO NOT...

- DO NOT use a screw-on, push-on, twist-on, or any other over-the-counter connector to terminate the antenna cable. Low-quality connectors will degrade system performance and may damage the TracVision equipment.
- DO NOT kink or stress the antenna cable.



Do's and Don'ts - Wiring (cont'd)

DO NOT...

- DO NOT route the antenna cable where it may become chafed.
- DO NOT disconnect the two short cables that connect from one jack to another on the receiver's rear panel. The system will not work if these cables are disconnected.
- DO NOT connect any other type of receiver to the TracVision system.



Do's and Don'ts - Power

DO...

- DO remove the key from the ignition and remove the negative lead from the vehicle's battery **before** connecting the receiver power cable.
- DO connect the receiver power cable's red (positive) wire to +12 VDC switched (accessory) power.
- DO connect the receiver power cable's black (negative) wire to a bare metal chassis ground (such as a pillar ground screw) within 18" of the receiver.
- DO use fire-resistant AWG 8 wire, install a protective fuse (rated for 6 amps) within 18" of the battery, and install a relay, switched from the ignition, between the battery and the receiver, **if you are connecting the receiver to the battery.**

DO NOT...

- DO NOT connect the receiver to unswitched power.
- DO NOT wire any other device to the same power circuit.
- DO NOT connect the receiver directly to the battery without following the additional steps described above.
- DO NOT use inadequate AWG wiring.
- DO NOT ground any other device at the same grounding point as the receiver.



Do's and Don'ts - Operation

DO...

- DO teach your customer how to operate the remote control. *For example, tell the customer to press the HUGHES button to turn the backlight on for nighttime operation.*
- DO give the remote control, manuals, Quick Start Guide, and Activation Card to the customer.
- DO install two “AAA” batteries in the remote control.
- DO wait at least 20 seconds after powering up the antenna to move the vehicle.
- DO inform your customer about the product's limitations (blockage issues, limited to DIRECTV 101W satellite, etc.).

DO NOT...

- DO NOT move the vehicle for 20 seconds after powering up the antenna.
- DO NOT watch TV or operate the remote control while driving.



Do's and Don'ts - Service

DO...

- DO call KVH Technical Support at **1-401-847-3327** (*press 3, 5, then 1 to skip the recording*) or e-mail at **techs@kvh.com** if you need assistance when installing or servicing the TracVision A5.
- DO obtain an RMA number from KVH Technical Support, and write the number on the outside of the box, before returning any antenna or receiver.
- DO install tie-wrap shipping restraints before packing an antenna for shipment (see the *TracVision A5 Antenna Reshipping Instructions*).
- DO pack the antenna in its original shipping box using the original packaging materials.
- DO fill out a *Receiver Return Form* (see *Technical Bulletin 04_T_LND_12V_1*) and fax it to KVH at **1-401-845-8133** before returning a receiver.

DO NOT...

- DO NOT take apart an antenna or receiver to attempt repairs.
- DO NOT return a receiver without first completing a *Receiver Return Form* and faxing it to KVH (**1-401-845-8133**).
- DO NOT return any unit to KVH without an RMA number. Units received without an RMA number will be returned to you at your expense.



Troubleshooting

SYMPTOM	POSSIBLE CAUSE																		
	Receiver power switch turned off	Blown fuse	Insufficient power	Loose cable connectors	Satellite signal blocked	Water, snow, or ice on antenna	Satellite coverage issue	Weak satellite signal	Receiver not activated	Receiver lost activation information	Proper component button not pressed	Audio/video system not set to satellite source	System locked by passcode	Remote control not programmed	Local channels not available	Receiver locked up	RF-to-IR converter too close to receiver	Remote control batteries dead	Audio/video system faulty
System does not power on	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
No picture on video screen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Intermittent picture for short intervals																			
System works at rest, but not on the move																			
System does not find satellite																			
System restarts itself																			
Receiver beeps 3 times quickly at startup																			
Snowy DIRECTV television picture																			
Picture jumbled, parts missing, freezing																			
Certain channels do not work																			
Remote control does not work																			
Remote control does not operate other component																			
Only Preview channels are accessible																			
Only Family list channels are accessible																			

- For complete troubleshooting information, refer to Section 10 of the *TracVision A5 User's Guide* and the flowcharts on the following pages.



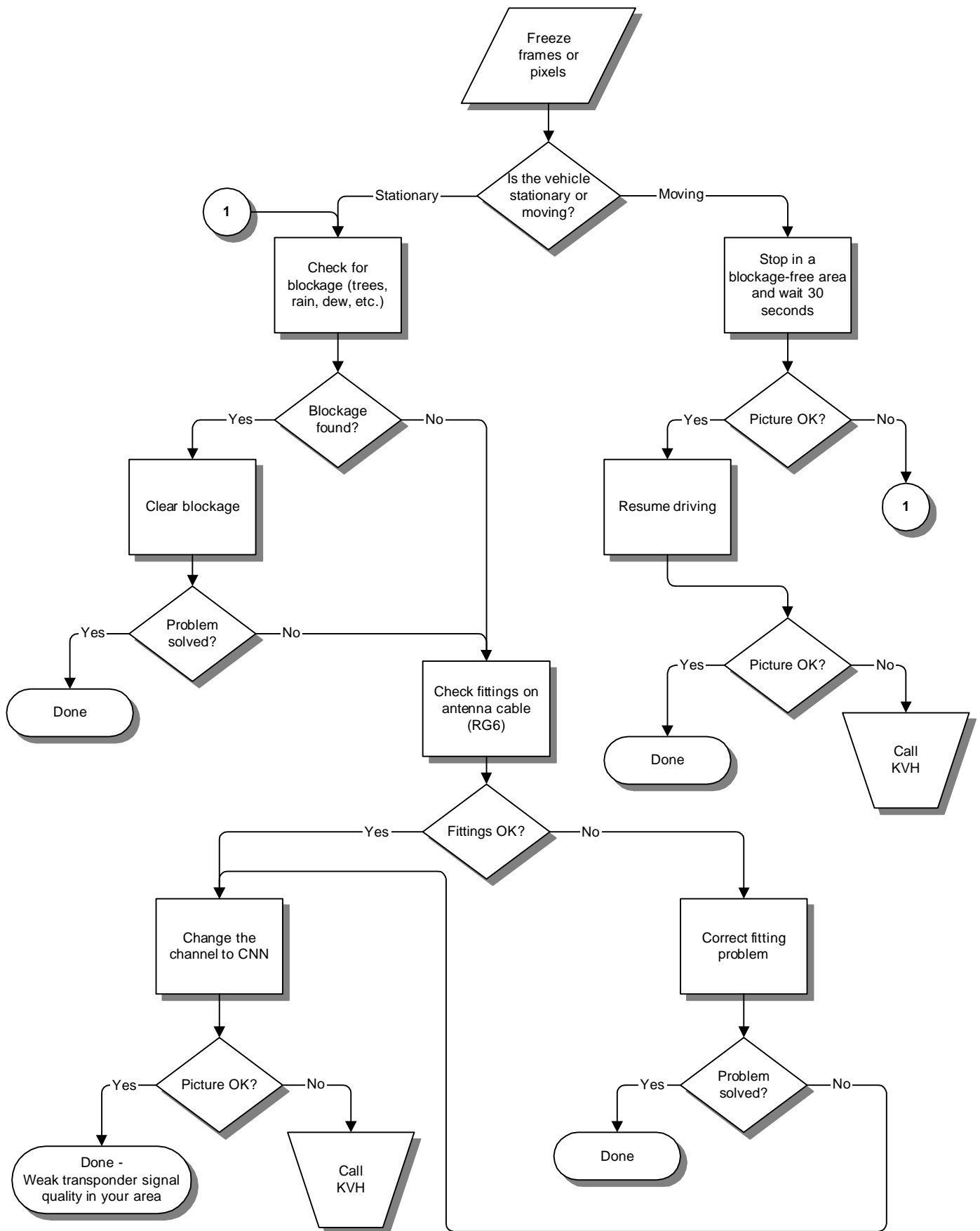
Troubleshooting Flowcharts

The following pages provide step-by-step flowcharts for troubleshooting the problems noted below:

- Picture freeze frames or pixels
- Receiver locks up after guide download completes
- Receiver turning on/off without user action
- Program Guide doesn't load and/or only odd transponders are OK
- Remote control works intermittently or not at all
- No picture and no DIRECTV banner
- No picture but DIRECTV banner displayed
- Antenna is noisy

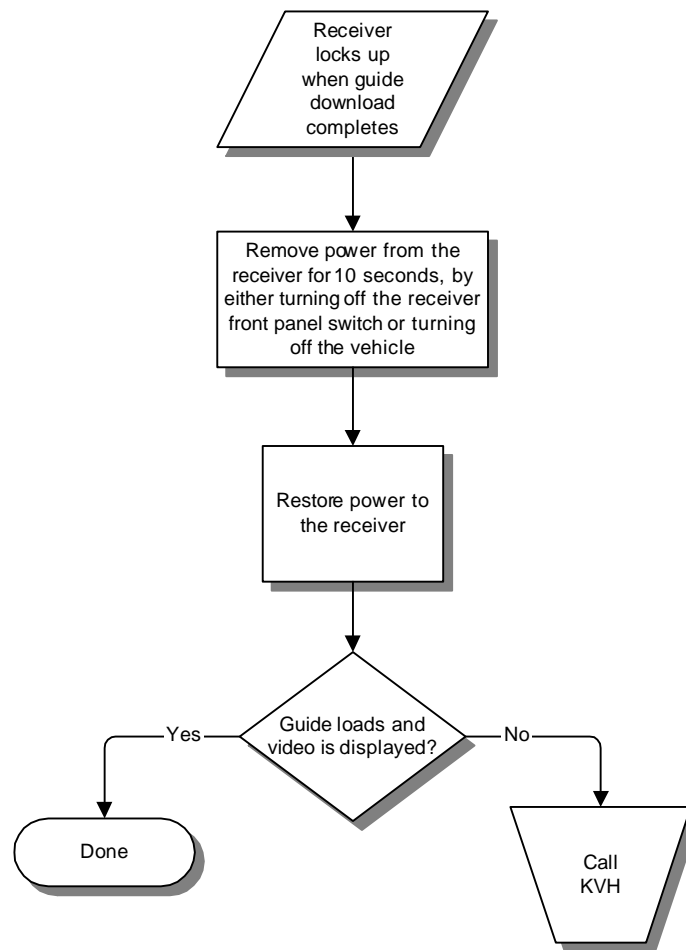
TracVision A5 Troubleshooting Flowchart

Symptom: Picture freeze frames or pixels



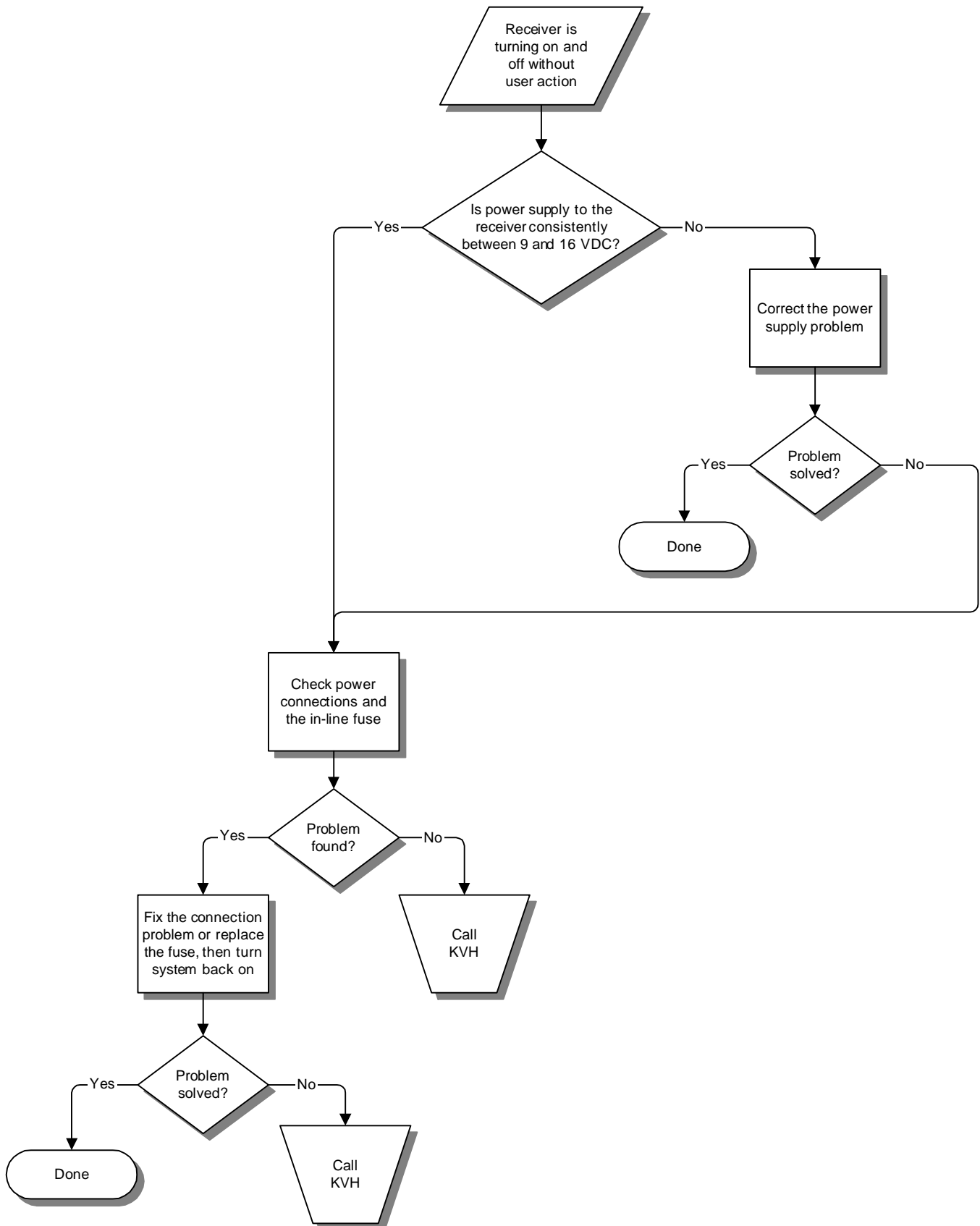
TracVision A5 Troubleshooting Flowchart

Symptom: Receiver locks up after guide download completes



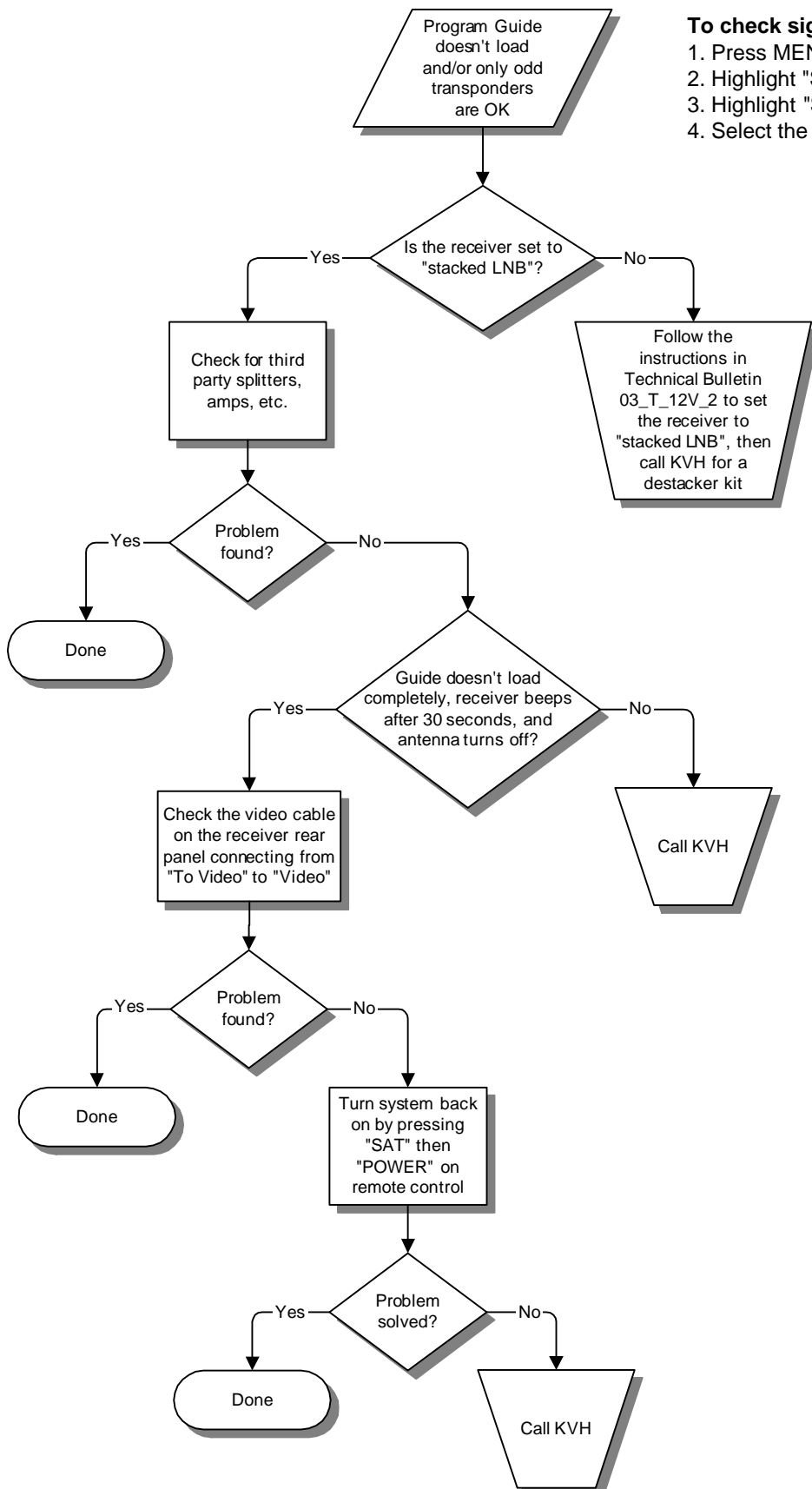
TracVision A5 Troubleshooting Flowchart

Symptom: Receiver turning on/off without user action



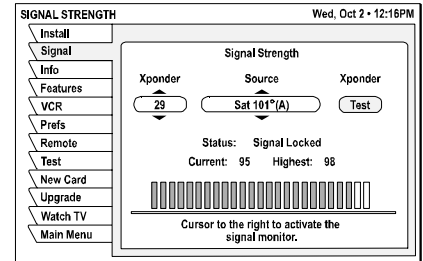
TracVision A5 Troubleshooting Flowchart

Symptom: Program Guide doesn't load and/or only odd transponders are OK



To check signal quality on odd/even transponders:

1. Press MENU
2. Highlight "System Setup" then press SELECT
3. Highlight "Signal"
4. Select the transponder ("xponder") to check

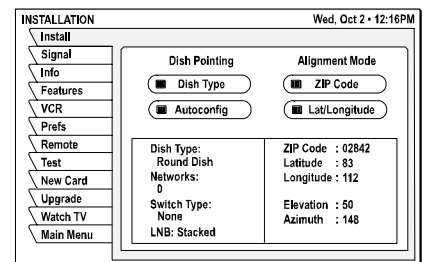


To check for "stacked LNB":

1. Press MENU
2. Highlight "System Setup" then press SELECT
3. Highlight "Install"

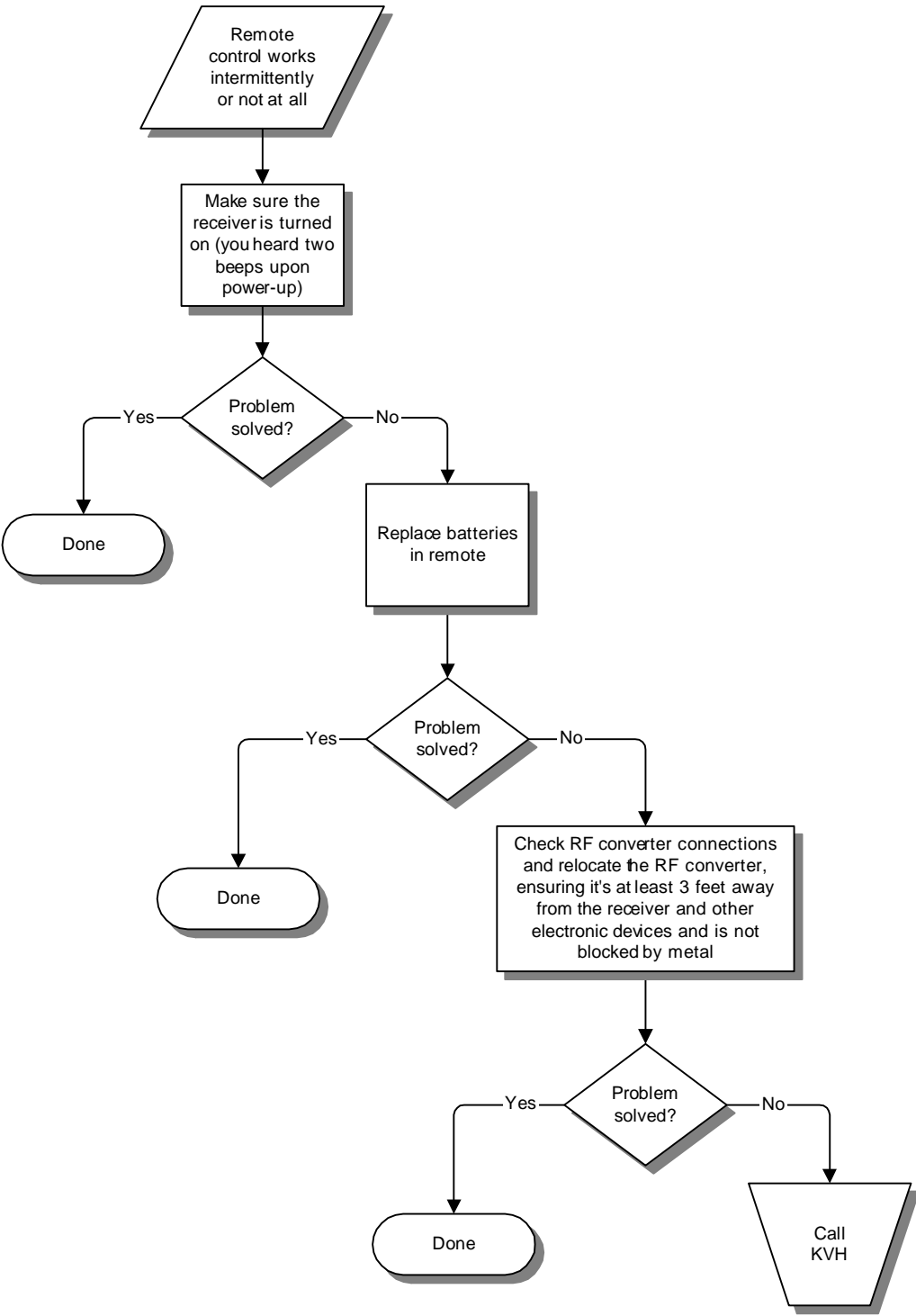
OR

While Program Guide is loading, press SELECT to bring up the "Install" screen



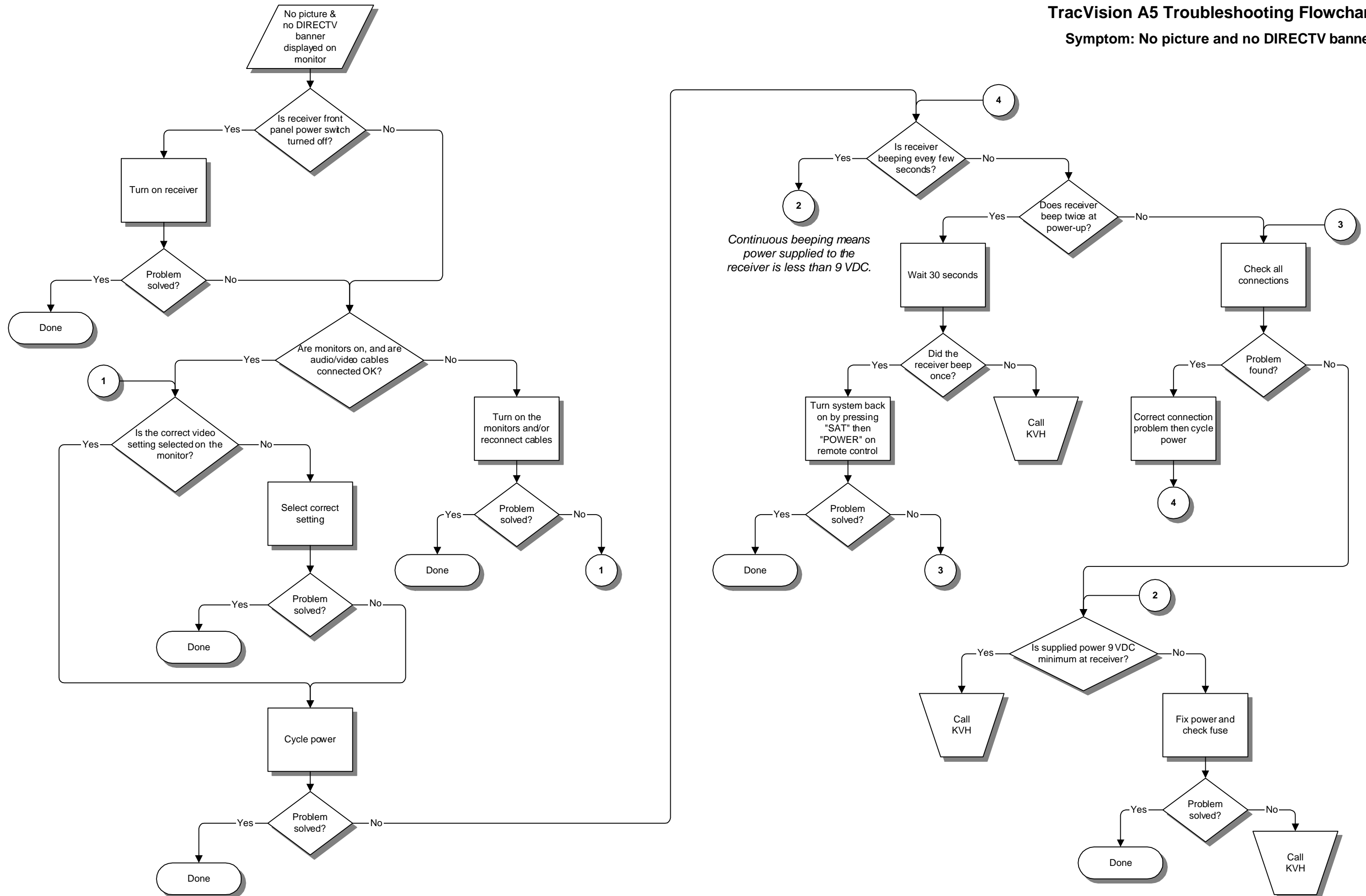
TracVision A5 Troubleshooting Flowchart

Symptom: Remote control works intermittently or not at all

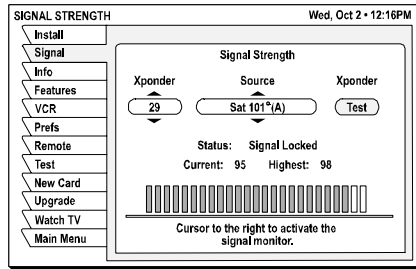


TracVision A5 Troubleshooting Flowchart

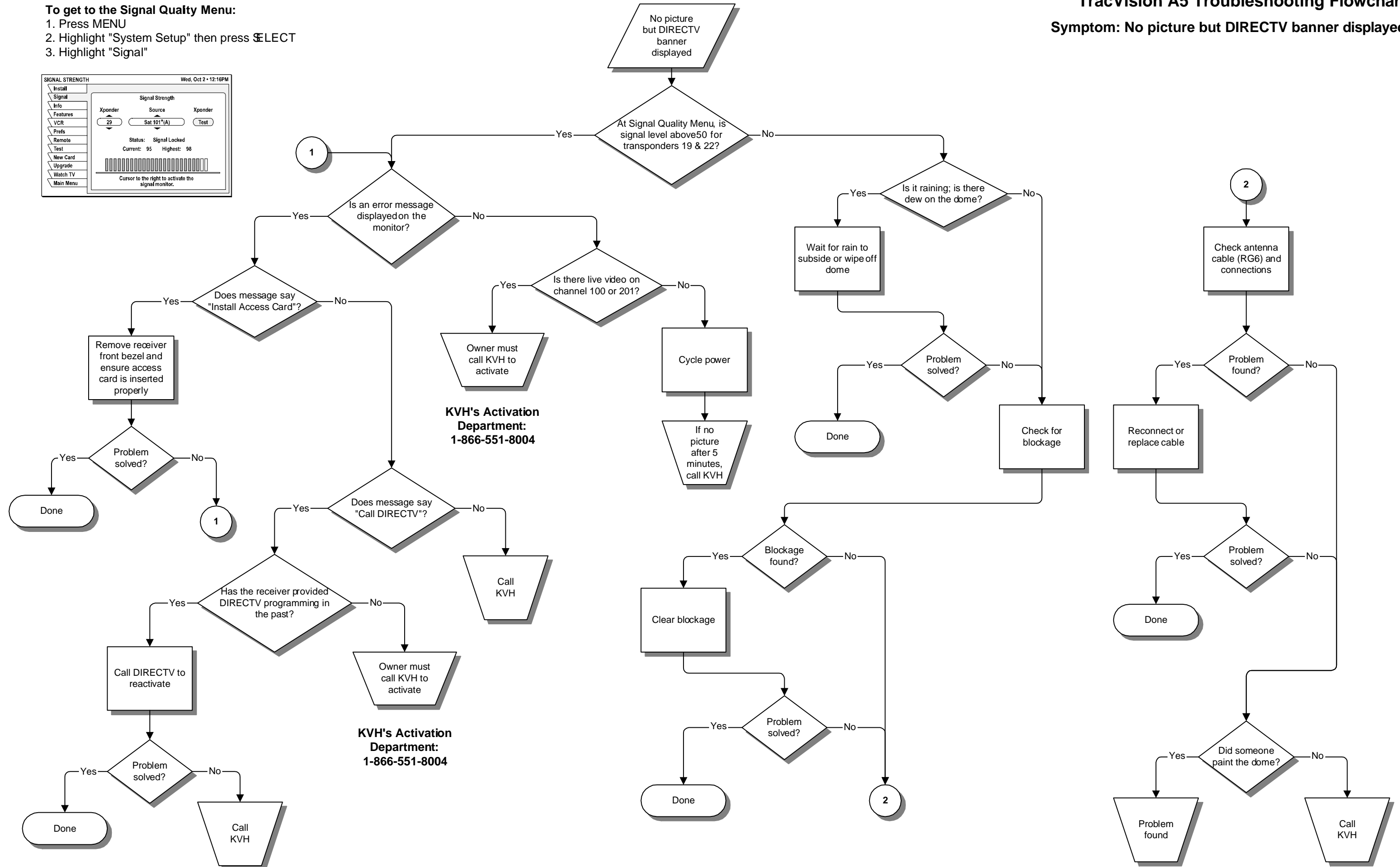
Symptom: No picture and no DIRECTV banner



1. Press **MENU**
2. Highlight "System Setup" then press **SELECT**
3. Highlight "Signal"



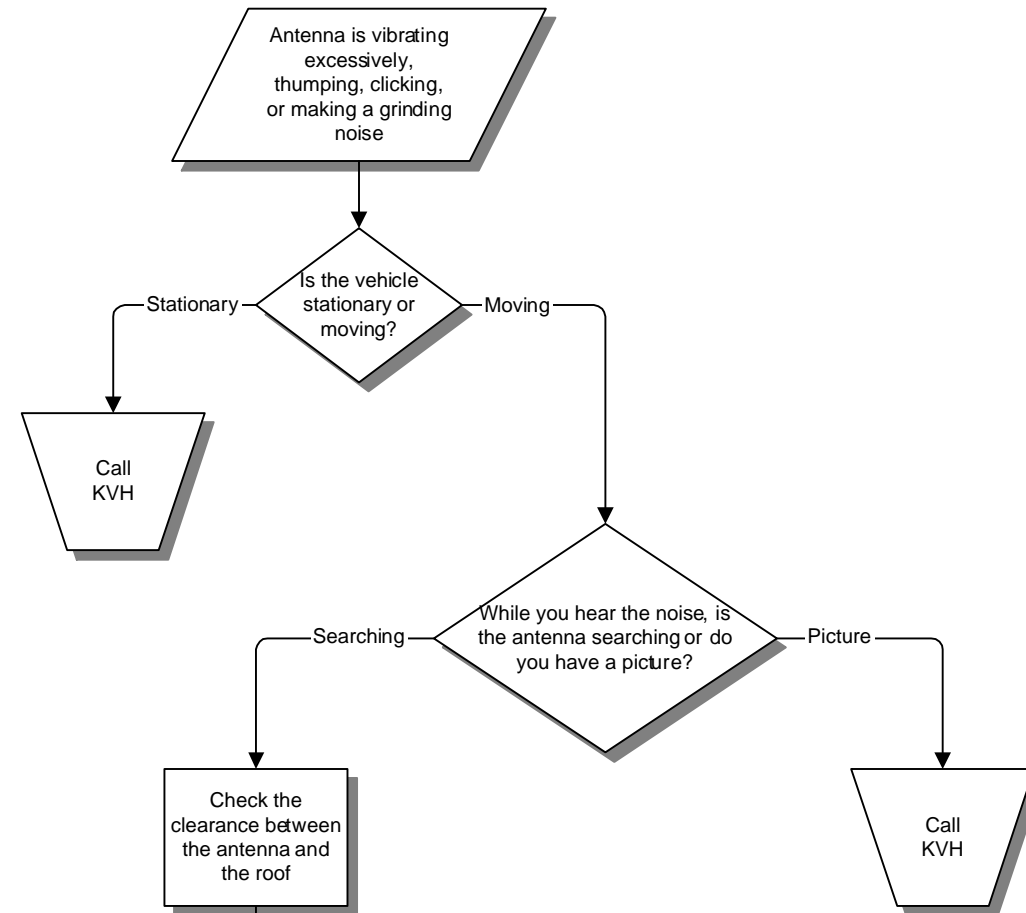
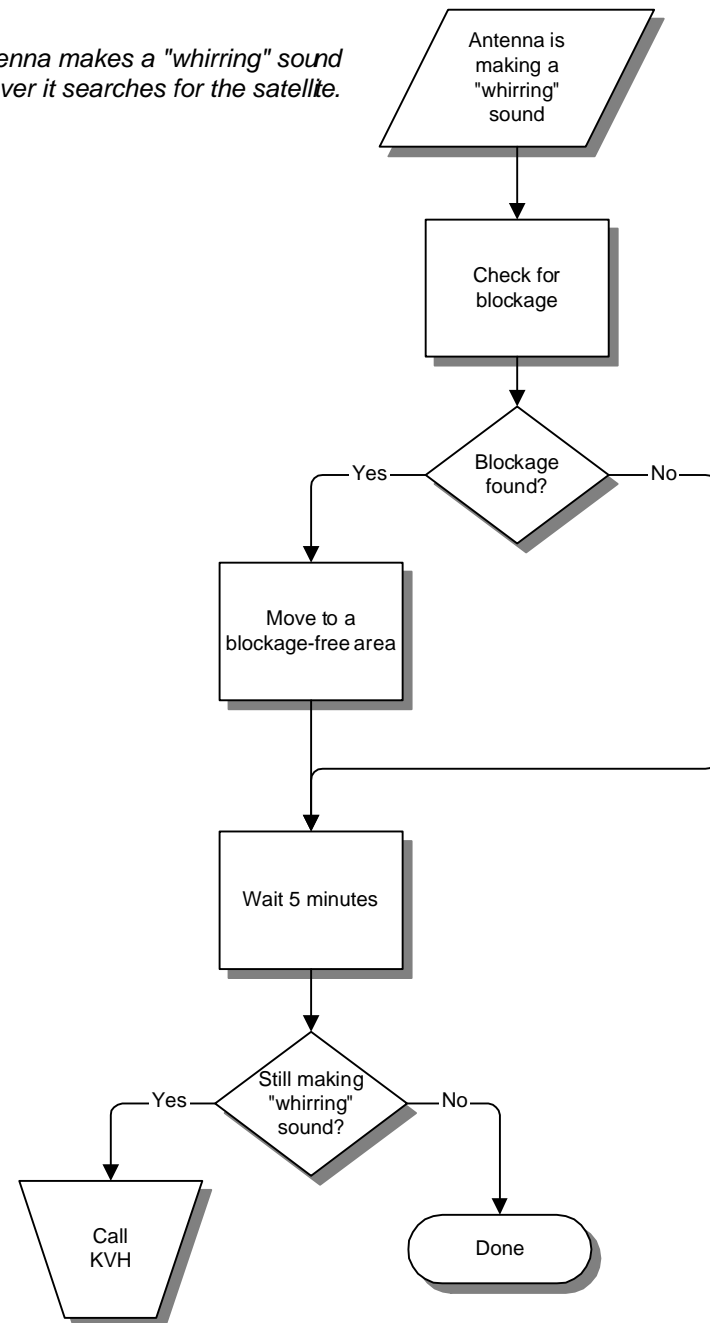
Symptom: No picture but DIRECTV banner displayed



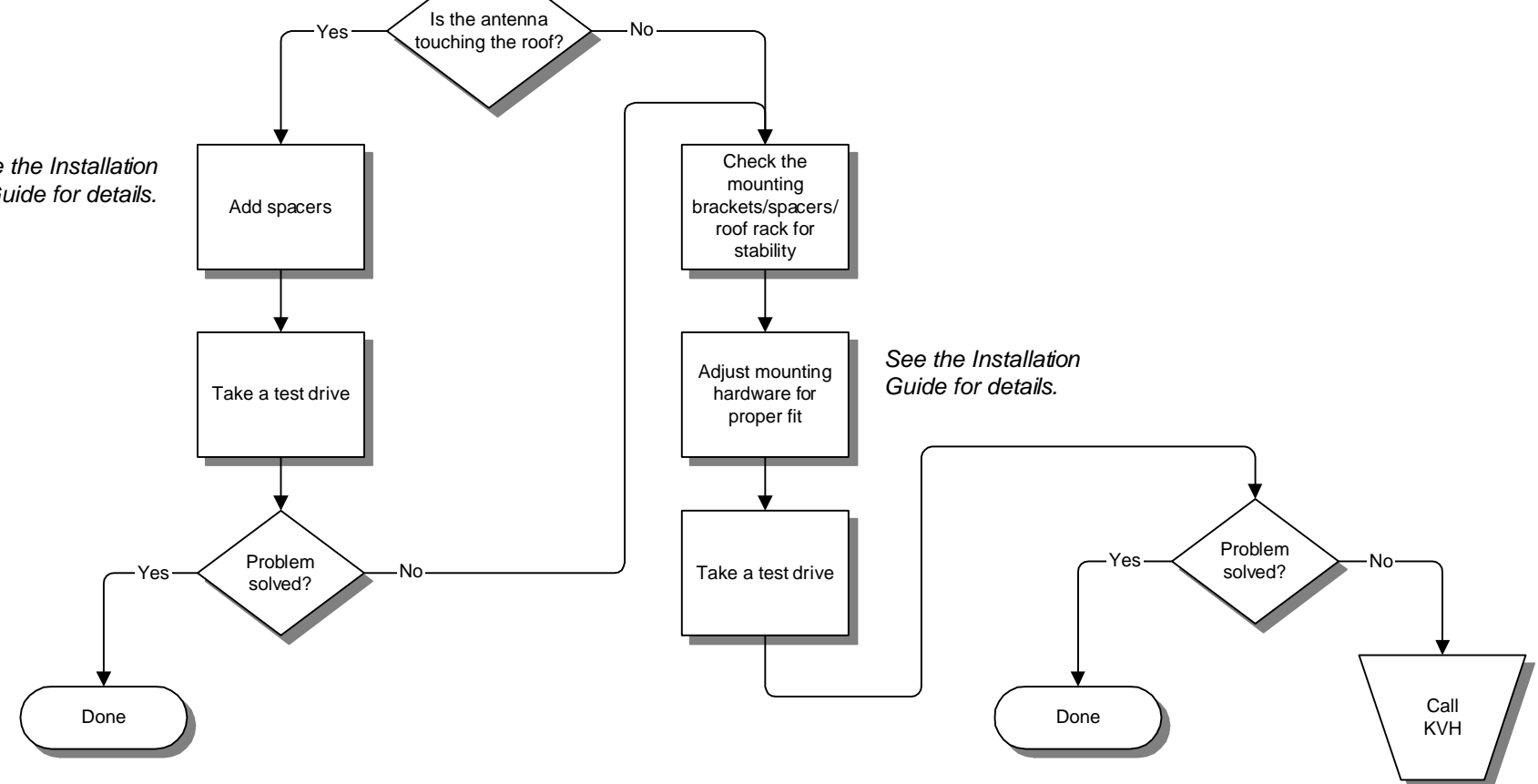
TracVision A5 Troubleshooting Flowchart

Symptom: Antenna is noisy

The antenna makes a "whirring" sound whenever it searches for the satellite.



See the Installation Guide for details.



See the Installation Guide for details.